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ABSTRACT

The development of a reliable and valid instrument to measure levels of school administrator burnout is the objective of this research. The stages involved in the development and assessment of the Administrator Role Perception Inventory (ARPI) were item writing, field testing, participant selection, test administration, and data analysis. The instrument was mailed to the 2,113 members of the Confederation of Oregon School Administrators, with a 62% return. Multivariate and univariate analyses were used to assess internal consistency, content validity, and criterion validity in relation to self-perceptions and perceptions of peers' levels of burnout. Findings point to the need for recognition of burnout and the importance of wellness programs to enhance administrator effectiveness. Twelve tables provide statistical substantiation of the results. (10 references) (LMI)

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THE DEVELOPMENT OF AN INSTRUMENT FOR MEASURING BURNOUT IN PUBLIC SCHOOL ADMINISTRATORS

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THE DEVELOPMENT OF AN INSTRUMENT FOR MEASURING BURNOUT IN PUBLIC SCHOOL ADMINISTRATORS

Objectives of Inquiry

The term "burnout" was coined within the last decade, and even a cursory examination will reveal that this phenomenon is receiving considerable attention in the popular press. The numerous journal articles, workshops, and papers focusing on burnout have shown that it is also a subject of interest to professionals in many fields. It had been studied in relation to social workers, counselors, prison personnel, mental health workers, policemen, and teachers. However, no study of burnout in school administrators had been conducted.

One reason for the absence of research on administrator burnout was the lack of an instrument for identification and measurement of the phenomenon as it is manifested in this particular population. The Maslach Burnout Inventory (MBI) was developed for use with people employed in the health and human service occupations, and was the only instrument for which reliability and validity measures were available (Maslach and Jackson, 1981).

One might ask if administrator burnout is different from burnout in other professionals. Two factors bear consideration. Burnout has been associated with those who work with people having problems, or "deficit situations." The work of school administrators is much broader than that, although negatively-oriented, people problems do occur. Also, burnout has been associated with the degree of direct contact with clients (Maslach and Jackson, 1977; Pines and Maslach, 1978). In schools, the direct clients are the students. However, for administrators, clients also include other staff and

parents. Thus, the jobs of school administrators differ from the jobs of other human service workers in terms of the nature of the problems encountered and the degree of direct client contact. The populations were deemed sufficiently dissimilar that generalization from human service workers to administrators would be unsound.

It was the objective of this inquiry to develop a reliable and valid instrument for the measurement of burnout in school administrators. This paper reports the development of such an instrument, the Administrator Role Perception Inventory (ARPI), and the establishment of its reliability and validity.

Methods

The development of the ARPI and the assessment of its reliability and validity involved item writing, field testing, participant selection, test administration, and data analysis for reliability and validity.

Item writing

The co-authors began item development for the ARPI following an initial review of the literature. Throughout the year of development, 1981-82, journals were regularly featuring articles about burnout, necessitating an ongoing review of the literature simultaneously with the development of the initial set of items. Eleven variables that appeared to be related to burnout were considered for inclusion in the initial version of the ARPI. These were locus of control, ego strength, expectation discrepancy, identification, temperament, involvement, motivation source, motivation quantity, acceptance, accomplishment, and physical vigor. Items were written for each variable, and each item was placed on a separate card. The cards were sorted and grouped by logic into the 11 categories. This process

continued over a period of about a month, along with editing for clarity, brevity, and relevance to school administrative roles. The resulting instrument contained 138 items, divided among the 11 subscales. The term "burnout" was omitted from the title and from all items. Conversations with administrators had shown the prevalence of strong opinions about the phenomenon, and it was felt that the presence of the term would inject considerable bias in the respondents' answers.

Field testing

Three field tests were conducted involving school administrators in urban and suburban districts. After the first field test, correlations were calculated for each item with its subscale and with all other subscales. Items were retained if they had a correlation of at least .300 with their subscale and no equal or higher correlation with some other subscale. Some items were moved to other subscales if their correlations with those subscales were substantially higher and a re-examination of the content of the item logically supported such a move. This resulted in the collapse of the 11 subscales into 5 separate subscales. Items from ego strength, temperament, and physical vigor became the items for the new subscale Psycho-physical State. Motivation quantity and motivation source became the subscale Motivation. Acceptance, involvement, and identification became the subscale Relationships. Items from locus of control were distributed throughout the other subscales where they had satisfactory correlations. Thus, the second version of the ARPI had 66 items and 5 separate subscales. However, it was decided to include an additional subscale, Time, composed of selected items from these five separate subscales. The co-authors felt that how a person viewed time could be a factor associated with burnout. Although this had not been mentioned in the

literature, it was decided to include a subscale which would reflect an administrator's time orientation, i.e. whether he or she viewed the present and future with optimism, or had a longing for the "good old days." Thus, the second version of the ARPI had a sixth subscale, Time, composed of items from the other five separate subscales.

The subscales of the final version of the Administrator Role Perception Inventory are defined as follows:

Expectation: The degree of discrepancy between one's reality and one's anticipated reality relative to one's job.

Relationships: The desire for and the quality of the continuous interaction with work-related colleagues and clients; the identification and involvement of self with colleagues and clients; and the acceptance of oneself by clients and colleagues.

Motivation: The propensity to initiate action; the inclination toward proactivity.

Accomplishment: The sense of attainment of one's professional goals.

Psycho-physical State: The overall mental, emotional, and physical vigor and resilience of an individual.

Time: The tendency to view the past as better than the present; a longing for the "good old days."

The entire scale of administrative role perception is defined as: the administrator's unique and private perception of his or her phenomenological world, in terms of expectation, motivation, accomplishment, relationships, psycho-physical state, and time orientation.

This total role perception was believed to be related to burnout, which was defined as a syndrome involving (1) decreased motivation, (2) expectation discrepancy, (3) negative attitudes toward self, clients, and job, and (4) physical and emotional exhaustion.

The second field test was conducted, and the item-subscale correlations were again examined. This examination resulted in the retention of the same subscales, but the elimination of 16 items, leaving the final version of the ARPI with 50 items. Table I shows the item-subscale correlations for the items which were retained in the final version.

Selection of participants

To obtain an adequate response rate, the help of the Confederation of Oregon School Administrators (COSA) was sought. This is the largest organization of school administrators in the state; active members, representing all levels of school administration, numbered 2,113. The ARPI and validation materials were mailed to all COSA members.

Test administration

In mid-August of 1982, each COSA member was sent a packet of materials which included a letter of endorsement from COSA, a copy of the ARPI, a Job Data Sheet, and a postage-paid envelope for the return of the requested materials to COSA. The Job Data Sheet asked for demographic data and also contained questions about the administrator's perception of his or her level of burnout, job stress, and desire for early retirement. Anonymity was guaranteed by the absence of any kind of identifying code on these materials, though they were bundled by zip code for mailing.

TABLE I

ITEM - SUBSCALE CORRELATIONS FROM FINAL FIELD TEST

Expectation		Motivation		Psycho-Physical State		Relationships		Accomplishment		Time	
Item	Correlation	Item	Correlation	Item	Correlation	Item	Correlation	Item	Correlation	Item	Correlation
1	.411	2	.601	3	.584	4	.435	5	.382	3	.652
6	.442	7	.516	8	.557	9	.475	10	.448	19	.450
11	.463	12	.213*	13	.327	14	.435	15	.483	28	.493
16	.341	17	.499	18	.664	19	.449	20	.511	33	.528
21	.428	22	.425	23	.628	24	.360	25	.488	38	.551
26	.385	27	.381	28	.533	29	.501	30	.554	39	.398
31	.246*	32	.320	33	.518	34	.356	35	.258*	49	.323
36	.335	37	.095*	38	.543	39	.386	40	.468	50	.499
41	.403	42	.208*	43	.628	44	.407	45	.476		
46	.245*	47	.344	48	.435	49	.357	50	.444		

*Items which had met acceptable criteria in previous field testing and were retained to give sufficient subscale length.

From each of the 159 bundles which contained three or more packets, one packet was randomly removed. The materials in it were labeled with the zip code, and a zip code-labeled Colleague Packet was inserted. The COSA member was instructed to give this Colleague Packet to a colleague, who would independently complete the information about the member and then return it in a separate, postage-paid envelope to COSA.

Within a month, 62% of the COSA members had returned the materials as requested. Data analysis began.

Determination of reliability

Four major sources of error in establishing reliability were addressed (Marshall and Hales, 1971). The attempt was made to include enough items for adequate content sampling but not so many that respondents would discard the instrument. Comments of the administrators who had participated in the field tests had indicated that it was much too long; thus, it was shortened to 50 items.

Another concern was the diversity of items. A careful review of the literature provided examples of the diversity that was needed, and items were developed to reflect this diversity.

A third potential source of error was in the administration of the instrument; circumstances of the day and how the participant felt could affect the response. Although this is difficult to control in a mailed questionnaire, the time of year was selected to be as uniformly calm for as many administrators as possible.

The fourth source of error was in the consistency of the variable. Items were written as unambiguously as possible, and changes were made in light of the comments gleaned from the field testing.

It has been said that the major problem in test reliability is from improper item sampling, and the use of the internal consistency method has been recommended when "the retest method is not advisable and when alternate forms are not available" (Nunnally, 1972, p. 111). Thus, coefficient alpha, a measure of internal consistency, was selected as the statistic to describe the reliability of the ARPI. It was calculated for each of the six subscales, as well as for the entire ARPI.

Determination of validity

Both content validity and criterion-related validity were addressed in this study.

Content validity. Kerlinger (1973) has described content validity:

> Content validation is guided by the question: Is the substance or content of this measure representative of the content or the universe of content of the property being measured?... Content validation consists essentially in judgment. Alone or with others, one judges the representativeness of the items. (p. 458)

For the ARPI, judgment was made by the co-authors. Opinions of practicing school administrators were sought as to the nature of burnout; the results of the literature review were incorporated; information from conferences related to burnout was included; the topic was discussed with colleagues in educational administration, public administration, and psychology. Finally, the early drafts were field tested and the reliabilities studied; the co-authors judged which items would not hold up and those items were discarded. Thus, although the matter of content validity is quite subjective, a number of methods were employed in order to establish that validity.

Criterion-related validity. Kerlinger defined criterion-related validity as follows:

> ...Criterion-related validity is studied by comparing test or scale scores with one or more external variables, or criteria known or believed to measure the attribute under study. (p. 459)

Stress has been shown to be related to burnout. Therefore, coefficients of correlation were determined for the administrators' total ARPI scores and their subscale scores with these questions on the accompanying Job Data Sheet, as shown in Figure 1.

9. How much stress is in your work?								
0 none	1	2 some	3	4 moderate	5	6 consider-able	7	8 tremen-dous
10. How much stress do you feel?								
0 none	1	2 some	3	4 moderate	5	6 consider-able	7	8 tremen-dous

Figure 1. Stress questions on Job Data Sheet

In addition, the desire to get out of one's job has been shown to be related to burnout (Maslach and Jackson, 1979). Thus, coefficients of correlation were determined for the administrators' total ARPI scores and their subscale scores with these questions on the Job Data Sheet, as shown in Figure 2.

7. How often do you think about taking early retirement?								
0 never	1	2 rarely	3	4 sometimes	5	6 frequently	7	8 nearly all the time

Figure 2. Early retirement question on Job Data Sheet

Each of the subscales, except for Time, has been shown in the literature to be related to burnout. Thus, coefficients of correlation were determined for the administrators' total ARPI scores and their subscale scores with the self-report measure of burnout included on the Job Data Sheet, as shown in Figure 3.

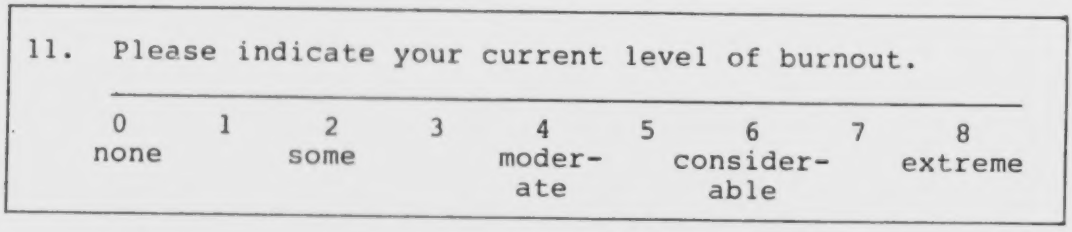

Figure 3. Self-perceived burnout question on Job Data Sheet.

Further use was made of the self-perception measures in establishing the validity of the ARPI. The level of self-perceived burnout was re-coded so that the nine levels were collapsed into three. Those administrators who scored a 1, 2, or 3 were grouped as low burnout. Scores of 4, 5, or 6 were classified as moderate burnout. The high burnout classification included scores of 7, 8, and 9. A multivariate, one-way analysis of variance was performed on the five separate subscales of Expectation, Motivation, Accomplishment, Psycho-physical State, and Relationships, using the level of burnout as the independent variable.

With the rejection of the statistical hypothesis associated with the multivariate analysis of variance, the determination was made to continue the analysis by doing a univariate, one-way analysis of variance for each of the five separate subscales. This type of analysis was also done for the Time subscale and for the total ARPI. All statistical hypotheses were tested at the .05 confidence level.

Additional validation was achieved through the use of observer measures obtained on the Colleague Questionnaire. Scores on the Colleague Questionnaire were correlated with the ARPI scores.

Results and Conclusions

The ARPI consists of 50 items, divided equally among the five subscales of Expectation, Accomplishment, Motivation, Psycho-physical State, and Relationships. A sixth subscale, Time, is composed of eight items selected from the other subscales. For each item, administrators marked one of the following responses: strongly disagree, disagree, neutral, agree, or strongly agree. These were scored from one through five, in that order. The highest possible score for each of the five separate subscales would be 50, and the lowest possible would be 10. the highest possible total ARPI score would be 250, while the lowest score would be 50. The subscales were so designed that higher scores correspond with the more positive, "healthier" perceptions; therefore, the items written in the negative were given a reverse scoring.

The mean of the total ARPI inventory was 175.12; the means of the subscales ranged from 28.07 to 39.72. The standard deviation of the entire inventory was 19.17; the standard deviations of the subscales ranged from 4.14 to 6.44. Table II summarizes the statistics.

TABLE II

MEANS AND STANDARD DEVIATIONS FOR SUBSCALES AND TOTAL ARPI

Subscale	Mean	Standard Deviation
Expectation	28.07	5.44
Motivation	35.30	4.71
Psycho-physical State	32.96	6.44
Relationships	39.07	4.29
Accomplishment	39.72	4.14
Time[a]	28.68	4.71
Total ARPI	175.12	19.17

[a]Time is an eight item scale.

Reliability and Intercorrelations

Measures of internal consistency, using coefficient alpha, were produced to assess the reliability of the ARPI and of its subscales. Reliabilities for the subscales ranged from .70 to .85. The reliability for the total ARPI was .91. Table III shows the internal consistency for each subscale and for the entire ARPI scale.

TABLE III

COEFFICIENT ALPHA FOR EACH SUBSCALE AND FOR TOTAL ARPI

Scale	Coefficient Alpha
Expectation	.71
Psycho-physical State	.85
Relationships	.75
Motivation	.70
Accomplishment	.78
Time	.78
Total ARPI	.91

Subscale intercorrelations ranged from .31 to .63, excluding Time, which is composed of items from the other subscales. Correlations between the subscales and Time are higher, as would be expected, since there is an overlap in items. The correlations between the subscales and the total ARPI are also inflated because the total scale contains the items of the various subscales. Table IV details the subscale intercorrelations.

Criterion-related validity

Criterion-related validity was investigated for the ARPI as a whole and for each of the subscales. Measures of selected variables known or believed to be associated with the phenomenon of burnout were correlated with the total ARPI scale and each of the subscales. Two sources of measures were employed: (1) self-perceptions of the participating administrators and (2) perceptions of their colleagues. It is important to recall the direction of scoring when interpreting the correlations which were obtained. The ARPI and the observer perceptions on the Colleague Questionnaire are scored so that higher scores are "healthier", in the direction of lower burnout. The self-perceived measures are scored so that higher scores indicate higher burnout, stress, etc. Thus, negative correlations would be expected between the ARPI scores and the self-perception measures; positive correlations would be expected between the ARPI scores and the observer measures. All correlations were found to be in the expected direction, and most were significant at the .001 level. Table V details the correlations and their significance.

TABLE -IV -

SUBSCALE INTERCORRELATIONS

	Expectation	Motivation	Psycho-physical State	Relation ships	Accomplish-ment	Time	Total ARPI
Expectation		.35	.56	.31	.34	.50	.70
Motivation			.58	.46	.64	.66	.78
Psycho-physical State				.46	.51	.80	.85
Relationships					.58	.67	.70
Accomplishment						.66	.77
Time							.86
Total ARPI							

TABLE V

CORRELATIONS BETWEEN VARIABLES ASSOCIATED WITH BURNOUT AND THE ARPI SCORES

	Subscale						
Variable	Total ARPI	Time	Expectation	Motivation	Accomplishment	Relationships	Psycho-physical State
Self-perceived stress in work	$-.21^{xxx}$	$-.18^{xxx}$	$-.27^{xxx}$	$-.08^{xx}$	-.01	$-.08^{xx}$	$-.28^{xxx}$
Self-perceived felt stress	$-.42^{xxx}$	$-.37^{xxx}$	$-.39^{xxx}$	$-.25^{xxx}$	$-.19^{xxx}$	$-.18^{xxx}$	$-.48^{xxx}$
Desire for early retirement	$-.41^{xxx}$	$-.38^{xxx}$	$-.23^{xxx}$	$-.46^{xxx}$	$-.30^{xxx}$	$-.24^{xxx}$	$-.33^{xxx}$
Self-perceived level of burnout	$-.59^{xxx}$	$-.55^{xxx}$	$-.37^{xxx}$	$-.53^{xxx}$	$-.40^{xxx}$	$-.32^{xxx}$	$-.58^{xxx}$
Total observer perception (Colleague Questionnaire)	$.31^{xx}$						

^{x}Significant at .05 level

^{xx}Significant at .01 level

^{xxx}Significant at .001 level

Correlations. It can be seen that significant correlations with the self-perception measures of job stress, desire for early retirement, and level of burnout exist for the total ARPI scale and for each of the subscales. A significant correlation also exists between the observer measure Colleague Questionnaire and the ARPI. These correlations are comparable to those produced in similar studies. For example, Maslach and Jackson found a correlation of .68 between police officers' desire to quit and their MBI scores (1981)[1]. Other significant correlations reported by Maslach and Jackson from the same study are: .30 between emotional exhaustion and the amount of time in direct contact with clients; -.21 between scores on meaningfulness of work on the Job Diagnostic Survey and depersonalization; .30 between absenteeism and depersonalization.

Analysis of Variance. The multivariate, one-way analysis of variance performed on the five separate subscales, using the level of burnout as the independent variable, yielded a Hotellings t of .61220 with a calculated F of 74.08 (Hull and Nie, 1981). For 10 and 2420 degrees of freedom, at alpha equal .05, the table value of F is 2.54. Therefore, the statistical hypothesis that there was no difference among the means for the different levels of burnout was rejected ($p < .001$). Then, with the three levels of burnout (high, moderate, low) as the independent variable, a univariate one-way analysis of variance was performed for each of the five subscales, Time, and the total ARPI, using the procedure described in the

[1]The MBI is scored so that higher scores are in the direction of higher burnout; this is opposite to the scoring of the ARPI.

Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975). Tables II through XII provide the analysis of variance data.

TABLE VI

ANOVA FOR LEVEL OF BURNOUT AND ARPI SCORES

Group	Sample X	σ	n
1 -- low burnout	185.09	15.99	623
2 -- moderate burnout	166.85	15.41	499
3 -- high burnout	151.69	16.83	96

Source of variation	df	MS	F
Between groups	2	74376.71	297.11*
Within groups	1215	250.33	

*$p < .001$, $.999 F_{2,1215} = 6.97$

TABLE VII

ANOVA FOR LEVEL OF BURNOUT AND EXPECTATION SCORES

Group	Sample X	σ	n
1 -- low burnout	29.91	5.17	623
2 -- moderate burnout	26.43	4.87	499
3 -- high burnout	24.24	5.43	96

Source of variation	df	MS	F
Between groups	2	2430.33	94.53*
Within groups	1215	25.71	

*$p < .001$, $F_{2,1215}^{.999} = 6.97$

TABLE VIII

ANOVA FOR LEVEL OF BURNOUT AND MOTIVATION SCORES

Group	Sample X	σ	n
1 -- low burnout	37.44	3.93	623
2 -- moderate burnout	33.56	4.19	499
3 -- high burnout	29.80	4.21	96
Source of variation	**df**	**MS**	**F**
Between groups	2	3630.50	219.79*
Within groups	1215	16.52	

*$p < .001$, $F_{.999\ 2,1215} = 6.97$

TABLE IX

ANOVA FOR LEVEL OF BURNOUT AND PSYCHO-PHYSICAL STATE SCORES

Group	Sample X	σ	n
1 -- low burnout	36.32	5.38	623
2 -- moderate burnout	30.27	5.31	499
3 -- high burnout	25.05	5.05	96
Source of variation	**df**	**MS**	**F**
Between groups	2	8315.12	293.14*
Within groups	1215	28.37	

*$p < .001$, $F_{.999\ 2,1215} = 6.97$

TABLE X

ANOVA FOR LEVEL OF BURNOUT AND RELATIONSHIPS SCORES

Group	Sample X	σ	n
1 -- low burnout	40.22	4.11	623
2 -- moderate burnout	38.08	4.03	499
3 -- high burnout	36.41	4.56	96

Source of variation	df	MS	F
Between groups	2	996.05	58.83*
Within groups	1215	16.93	

*$p < .001$, $F_{.999\ 2,1215} = 6.97$

TABLE XI

ANOVA FOR LEVEL OF BURNOUT AND ACCOMPLISHMENT SCORES

Group	Sample X	σ	n
1 -- low burnout	41.21	3.69	623
2 -- moderate burnout	38.52	3.70	499
3 -- high burnout	36.19	4.95	96

Source of variation	df	MS	F
Between groups	2	1651.49	113.93*
Within groups	1215	14.50	

*$p < .001$, $F_{.999\ 2,1215} = 6.97$

TABLE XII

ANOVA FOR LEVEL OF BURNOUT AND TIME SCORES

Group	Sample X	σ	n
1 -- low burnout	30.98	3.86	623
2 -- moderate burnout	26.87	4.12	499
3 -- high burnout	23.09	4.18	96
Source of variation	**df**	**MS**	**F**
Between groups	2	3955.68	247.63*
Within groups	1215	15.97	

*p .001, $F_{.999}^{2,1215} = 6.97$

For each significant F, a Scheffé test (Glass and Stanley, 1970) was performed for all pair-wise mean comparisons. For every subscale except Relationships, the means of the subscales were significantly different for the levels of burnout. This was also true for the mean ARPI scores. (There were only two pairs of means that differed significantly on Relationships; the third pair, the difference between means in the moderate and high burnout groups was not significant.)

Summary. In conclusion, the total ARPI scores showed significant correlations at the .001 level with self-perceived measures of job stress, desire for early retirement, and level of burnout. These correlations were in the expected direction and were comparable to those produced in similar studies.

The correlation of the ARPI scores with the observer ratings

on the Colleague Questionnaire was also significant and in the expected direction. The magnitude was similar to those obtained in other studies using similar procedures.

In examining the relationship between levels of self-perceived burnout and the ARPI scores and subscale scores, Scheffé tests indicated that all pairs of means differed significantly at the .05 level, with the exception of the means for moderate and high burnout on Relationships. It was thus concluded that the ARPI is a reliable and valid instrument for assessing burnout in public school administrators in Oregon.

Educational Importance of the Study

This study is important for its contributions to the areas of measurement and educational practice. Instruments which purported to measure burnout were in existence prior to the completion of this study. With the exception of the MBI, little information was available concerning the development, testing, reliability, and validity of these instruments. A second instrument, the ARPI, now exists for assessing burnout. This instrument has demonstrated in this study, satisfactory internal consistency, content validity, and criterion related validity in relation to self-perceptions and perceptions of colleagues of level of burnout. In addition, this instrument permits the study of burnout in a new population.

The ARPI can be used by educational administrative groups as a tool for organizational diagnosis and evaluation. Because expectation discrepancy is closely associated with burnout, discussion of the group's scores on this subscale could lead to

organizational commitments toward reducing that discrepancy. This might include both improved systems of planning and communication, discussion groups for sharing common problems and successful ways of handling them, as well as inservice to improve technical competence in dealing with some of the more difficult current issues in educational administration.

The association between the feeling of lack of accomplishment and burnout has also been demonstrated. Awareness of these feelings in an administrative unit could lead to attention to and emphasis on increased recognition for personnel. Other logical outcomes might include greater development of team management which would provide the support which enhances accomplishment.

Group scores in the area of physical and emotional vigor could provide impetus for the implementation of wellness programs and training in examining one's approaches to stressful events.

The importance of studying burnout in school administrators is a natural extension of the literature on school effectiveness. There is ample evidence that the principal is a vitally important factor: his or her behavior and his or her expectations for the school are far more important to school success than are years of training, experience, and personal characteristics such as sex, race, and age. Effective leaders are active, not passive. They set goals and objectives, establish standards, create a productive working environment, and acquire necessary support (Clark, Lotto, and McCarthy, 1980). The behaviors for these actions are the opposite of those of a burned out administrator. Understanding burnout in school administrators may be an important step in increasing the effectivenss of our schools.

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